

Horticulture Northwest

Journal of the Northwest Ornamental Horticultural Society



Zygadenus venenosus

Horticulture Northwest

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Zigadenus venenosus
Rosemary Burnham



THE EXPANDING PROGRAMS OF THE UNIVERSITY OF WASHINGTON ARBORETA

Dr. Harold B. Tukey, Director
University of Washington Arboreta

The new position of Director of Arboreta at the University of Washington has a second and equally significant title--Professor of Horticultural Science. This appointment as professor carries with it the commitment of the University to a strong research and continuing education program in urban horticulture. The Pacific Northwest enjoys a moderate climate which allows the growing of a greater diversity of plants than in any other location in North America and most parts of the world. Already assembled is a great array of enthusiastic horticulturists and progressive plant-growing industries situated in the midst of a growing urban community. The combination of climate, plants, commercial industry, horticulturists, and now the University, offers a unique opportunity to form a first-rate urban horticulture program.

The University has supported its commitment to horticulture by the appointment of an *ad hoc* Planning Committee to develop faculty positions and design a new facility, located in the proposed Union Bay Research and Continuing Education Center of the Arboreta. The positions include:

1. A senior staff position in continuing education and public service. This position will be responsible for the programming of public service functions of the Arboreta, including coordination of courses, preparation of bulletins and extension-type publications, mass media communications, and interactions of the Arboreta with the horticultural societies and lay audiences of Washington. Continuing education is one of the two primary functions of the University of Washington Arboreta and is the major interface of the Arboreta and the horticulture public.
2. Horticultural physiology. A senior faculty member responsible for conducting and directing research on the physiology of plants growing in the urban environment, emphasizing the dynamic landscape situation. Of particular interest might be the physiology of plant propagation, including tissue culture propagation, to understand the basic biochemical aspects of root initiation and the practical aspect of propagation of new introductions and rapid root regeneration during transplanting. This position requires a strong scientific background in horticulture and plant physiology; supervision of graduate students and technical staff is expected.
3. Environmental horticulture. The functional use of plants for maintenance and enhancement of the urban environment including systems and requirements for growing plants in urban settings. Research topics might include effects of air pollution, acid precipitation, foliar nutrition and mineral cycling, and growth of roots in urban landscapes. This position will require good training in horticulture and plant materials, with a knowledge of integrative computer analysis, and a basic interest in the problems of planting, maintaining, and growing horticultural plants.

4. Urban integrated pest management. Extension personnel claim that more than 60% of questions from amateur gardeners are centered on problems of diseases and insects. This position would establish a program of research in entomology and plant pathology which affects urban flora, including identification of insects and pathogens, development of integrated control measures appropriate to urban conditions, and selection of plants which are better able to survive urban conditions. This position will interact with scientists in zoology and forestry, as well as extension personnel from Washington State University and the Federal government.

Although these areas of research are of the highest priority, the Committee has also discussed additional research areas including horticultural taxonomy, new plant introductions, landscape ecology, and horticultural psychology.

These programs are in addition to, not a substitute for, the current activities at the Washington Park Arboretum, which will continue to include plant propagation, public service lectures and educational offerings, maintenance of plantings, and curatorial investigations. They are the first steps in the Arboreta expansion toward a research and public service organization to serve the interests of the Pacific Northwest.

LYCIUM PALLIDUM

Sally Walker, Tucson, Arizona

There are many shrubs occurring at various elevations in the southwest which would make desirable ornamentals. One of these is *Lycium pallidum*. This is a deciduous spiny shrub about six feet high which is found in Arizona, California, Colorado, New Mexico, and Utah. It may grow in full sun or under the shade of juniper trees. Its light, blue-green oblong entire leaves are about one inch long and are alternate on the young shoots and fascicled on the older branches. The one-half inch long thorns grow in the axils.

It is the most attractive member of the genus, having larger flowers than the other species. Clusters of pendant flowers are produced in late April in southern Arizona. The narrow tube is three-fourth of an inch long; it is pink at the base and opens out into five short lobes which are yellowish-green with purple veinings. The bright orange fruits which grow above a glaucous persistent calyx are ripe in July and the calyx turns orange at the base after the fruit has fallen.

The common name of the genus is "Wolfberry" or "Desert Thorn;" there is apparently no common name for *Lycium pallidum* in particular. In this instance "Transition Zone Thorn" would be more accurate, for although it is found as low as 3,000 feet, it is also found up to 7,000 feet. As it often grows in thickets, it occurred to me that it would form an interesting hedge, but it was not until I saw a single specimen flowering in Kew gardens in June that I was able to appreciate the shape of the bush grown as an isolated specimen.

LYCIUM PALLIDUM

Brian Halliwell, Royal Botanic Garden, Kew

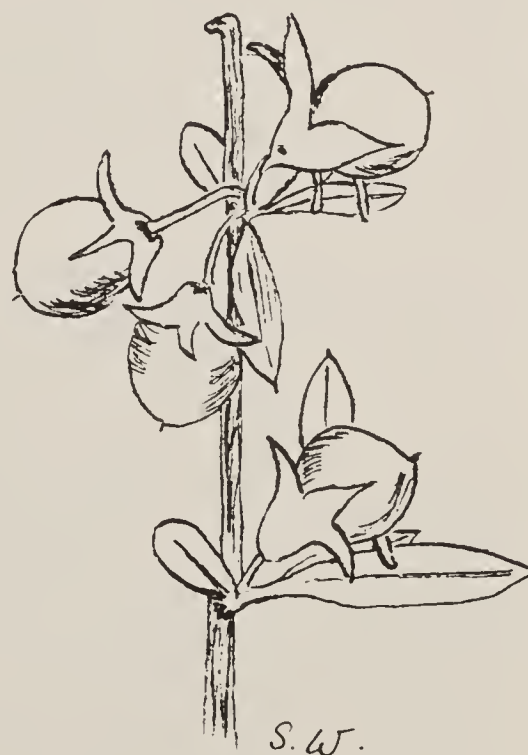
Lycium pallidum was received as seed from Sally Walker in 1972. She had collected it at between 5,000 feet and 5,500 feet in the Chiricahua Mountains in Arizona. It was sown on receipt by Kew in a well-drained compost with germination taking about 14 days in a cool glasshouse. Seedlings were potted singly when big enough to handle and when established, the pots were transferred to a frame. Young plants were planted out in a narrow but warm sunny border in 1974. The first flowers were produced in 1976 during June and it has continued its flowering each year in the same month with ever increasing freedom. Because it outgrew its position on the narrow border, it was transplanted elsewhere so that it would have more room but in a colder position. It is not the neatest of shrubs having a few upright stems with a tangle of spiny side shoots which are held more or less horizontally. The leaves which are sparingly produced are shed at the onset of winter.

Although it has produced its unusual greenish flowers in some quantity, no fruit has been set. Some shrubby members of *Solanaceae* need cross pollination before fruits are formed and as there is but a single plant this could account for the failure. Although this has an untidy habit, it is an interesting shrub, for its flowers, which are very freely produced, are of a colour only occasionally seen. Perhaps not for everyone, it is likely to appeal to the plant connoisseur and it is certain to excite the flower arranging nut both in its flower colour and form.



Lycium pallidum
flower

Illustration: Sally Walker



SPRING WILD FLOWERS OF THE GULF ISLANDS

Fred R. Ganders

Before I moved to British Columbia I once saw an advertisement that described the Gulf Islands of B.C. as "almost subtropical". This is about like describing Toronto as Canada's largest arctic metropolis. But there is no reason for the Gulf Islands to pretend to be something they are not. The Gulf Islands and the southeastern end of Vancouver Island have a climate unique in Canada, with mild, wet winters and dry summers. This climate is the northernmost extension in North America of the Mediterranean-type climate that is more pronounced further to the south. The flora of this small region, reflecting the climate, contains many plants found in no other part of Canada. Many species and genera of plants typical of California and Oregon reach their northern geographic limits here, in the specialized habitats of the Gulf Islands and Vancouver Island.

The flora of the Gulf Islands is a result of the interaction of climate, topography, history and soil. Storms come in from the west, bringing moisture from the Pacific Ocean. As the air is forced to rise over the mountains of Vancouver Island and the Olympic Peninsula, it cools, resulting in heavy precipitation on the windward side of the mountains. Depleted of much of its moisture, the air descends and warms on the lee side, so that the region just east of the mountains lies in a "rain shadow", and receives significantly less rain. Rainfall on the west coast of Vancouver Island may exceed 3800 mm per year, nourishing the mossy conifer rain forests for which coastal British Columbia is noted. Yet Victoria and the Gulf Islands may receive less than 750 mm of rain annually. Seasonal differences in rainfall are just as important to the vegetation as is the total amount of rain. In the Gulf Islands, rainfall is unevenly distributed throughout the year. In summer, the North Pacific high pressure system moves northward, diverting many of the rain-bringing storms. The result is an annual cycle with a pronounced wet season and a definite dry season in summer. In California the wet season is short, and confined to late fall and winter. As one moves north the wet season lengthens and the dry season shortens correspondingly. In B.C. the wet season includes fall, winter and spring. Summer, which is normally the season of most active plant growth, is a time of drought and stress for the plants of the Gulf Islands.

In some habitats the basic climatic pattern is accentuated by edaphic or soil factors. The islands were completely covered with ice by the Vashon glaciation as recently as 13,000 years ago. The lobes of glacial ice moved south into the Puget lowland of Washington and west through Juan de Fuca Strait like a giant file, rasping away the land surface down to the bedrock. After the Pleistocene glaciers melted, they left bare, scoured rock in many places. Soil has not completely developed in some of these areas in the short time since the glaciation. Rocky ledges and hills, covered by only an inch or two of soil or by mats of moss, are a prominent feature of the landscape. Woody plants are unable to colonize these well-drained, rocky sites. Although these natural clearings are wet in winter and spring, they can dry out completely in summer because the shallow soil is incapable of holding subsurface moisture. They are left to those plants which have special adaptations to endure or escape the dry summer, but they also allow a place in the sun for those small plants that cannot survive in the shade of the conifer forests found on deeper soils.

Climate is the major factor that determines the dominant vegetation of a geographical region. The Gulf Islands and adjacent Vancouver Island lie in the dry subzone of the Coastal Douglas Fir Biogeoclimatic Zone, according to Dr. Vladimir Krajina's classification of the vegetation of British Columbia. In this zone the dominant tree in climax forests is Coast Douglas Fir (*Pseudotsuga menziesii* var. *menziesii*), and in drier sites Garry Oak (*Quercus garryana*) and Arbutus or Pacific Madrone (*Arbutus menziesii*) are prominent as well.

Garry Oak occurs from California to British Columbia, reaching its northern geographical limit in the Gulf Islands region. This slow-growing, picturesque white oak is the most drought-tolerant of the major tree species in the region. It is our only native oak west of the Prairies. Arbutus also occurs from California to B.C., and has relatives in the American Southwest, the Caribbean, and the Mediterranean region. It is Canada's only native evergreen broadleaf tree, immediately recognizable by its smooth cinnamon-colored bark and shiny dark green leaves. Arbutus is sometimes referred to as the tree that sheds its bark instead of its leaves. This is not true, of course, for evergreen trees shed dead leaves just as deciduous trees do. But in evergreens the leaves may live for more than one year and they are not all shed at once, so that the trees are never leafless. The outer layers of Arbutus bark peel off in papery flakes, so that trunks and branches remain smooth and bright. Only on the trunks of very large trees does the bark build up enough to become checkered, scaly, and rough.

A shrubby relative of Arbutus is the Bristly Manzanita (*Arctostaphylos columbiana*), which also has smooth reddish bark but has small gray-green leaves. Low, mat-forming species of *Arctostaphylos* such as Kinnikinnick have a wide distribution in British Columbia. However, the shrubby members of the genus which are so plentiful in California are represented in the Gulf Islands region by this single species which is confined to the specialized habitats of the Coastal Douglas Fir Zone.

Though the trees and shrubs are interesting, it is in the rocky clearings that the most impressive displays of spring wildflowers are found. They are at their best from March through June, depending on how cold and wet the spring has been in any particular year. These natural flower gardens rival in color and variety the subalpine meadows of higher elevations. The ecological strategies of the Gulf Island plants are completely different from the strategies of subalpine plants, however. Subalpine plants must adapt to a short growing season in summer and long, cold winters. Gulf Island plants must cope with a partial reversal of dormant season, and endure or escape the dry summer. Three different life forms have been particularly successful at this.

Some perennial plants, called succulents, have fleshy stems or leaves capable of storing water which they use during the summer drought. There are not many succulents in the Gulf Islands. The commonest one is Broad-leaved Stonecrop, *Sedum spathulifolium*, and the most unusual one is the Brittle Prickly-pear Cactus *Opuntia fragilis*. The islands of B.C. and adjacent Washington are the only place north of southern California where cacti occur on the Pacific coast.

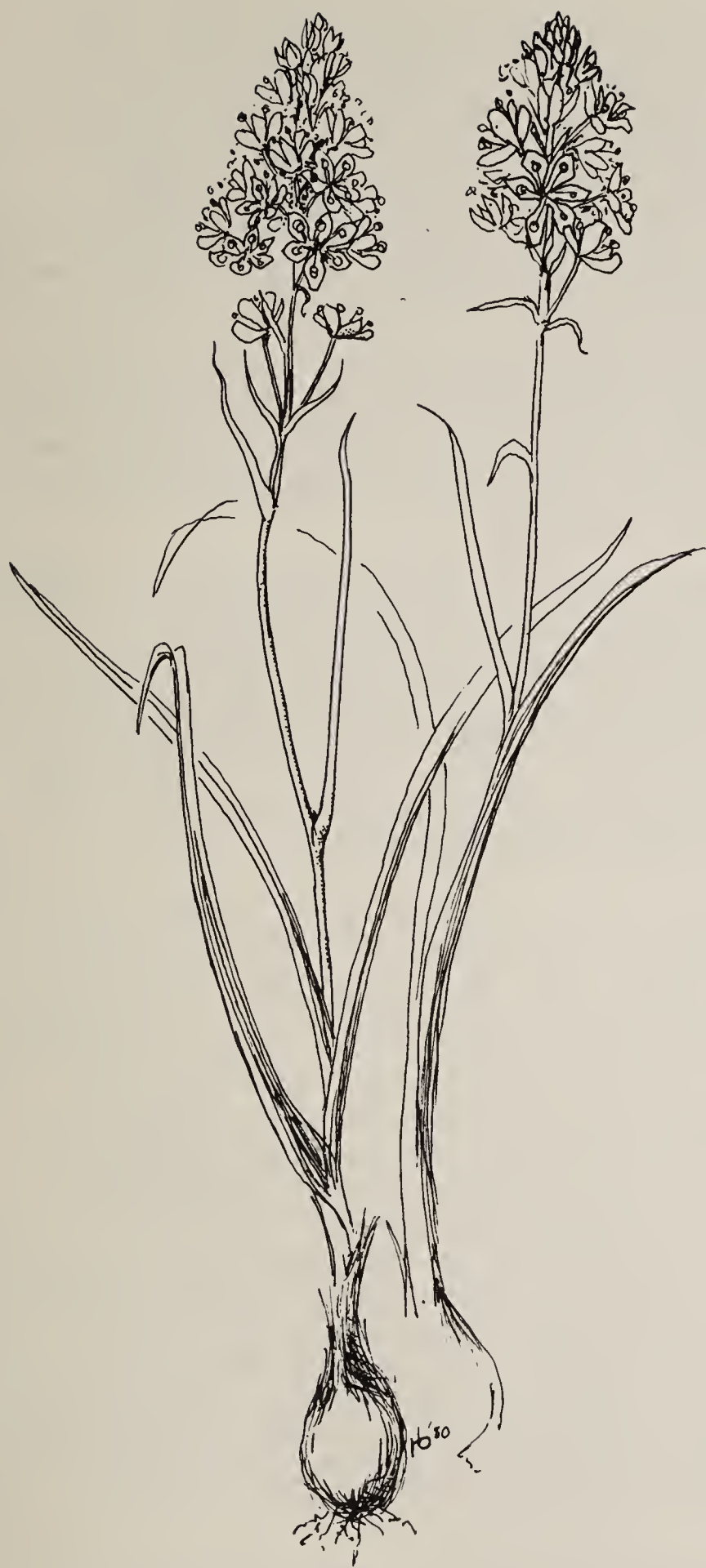
Perennial geophytes represent another successful life form in the islands. Geophytes are plants that survive their dormant season underground as bulbs or corms, modified leaves or stems that serve as food storage organs. These bulbous plants, many of which are in the lily family, make their vegetative growth in early spring. Some flower in spring, but others flower in early summer after their leaves have already shrivelled and died. After flowering and fruiting they dry up and disappear underground for the rest of the year.

These bulbous plants produce some of the most elegant spring flowers. Chocolate Lilies, *Fritillaria lanceolata*, have unusual mottled brown flowers with a semen-like odor, an adaptation for pollination by flies. Others include the deep blue Common Camas (*Camassia quamash*), Great Camas (*Camassia leichtlinii*), several species of wild onion (*Allium* spp.) and the cluster lilies *Brodiaea coronaria* and *Triteleia hyacinthina*. The nutritious and tasty bulbs of all of these, especially Camas, were important foods for western Indians. Another bulbous lily, the Death Camas (*Zigadenus venenosus*) sometimes turned out to be one's last meal if eaten by mistake.

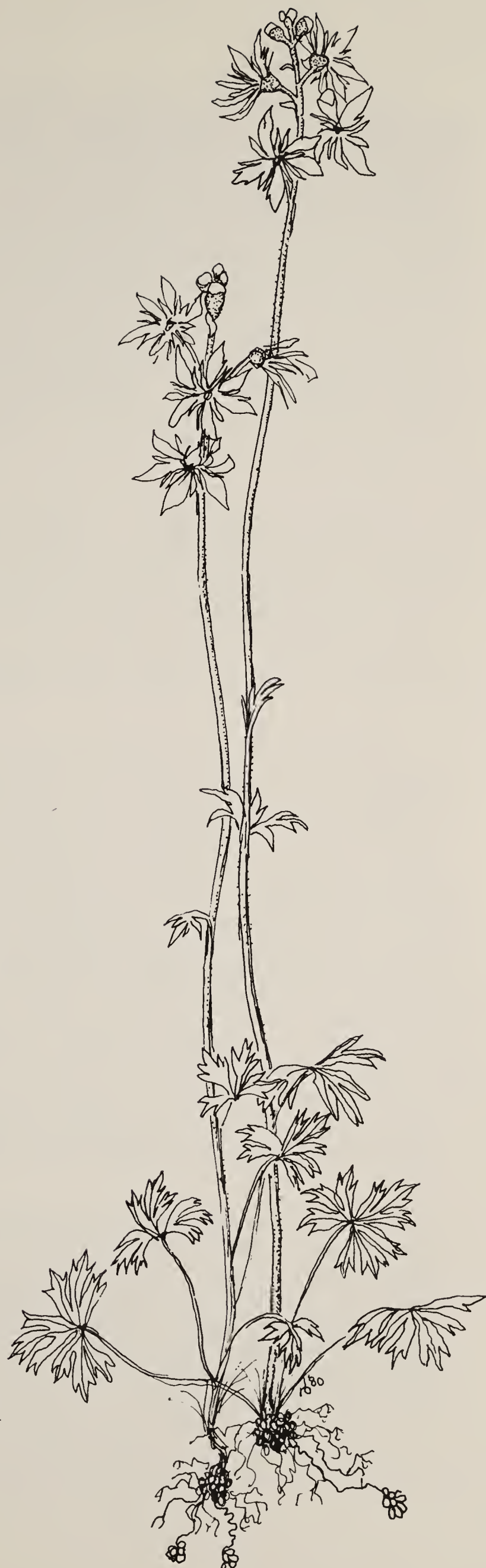
Lilies are not the only plants to survive the dry season with modified storage roots or rhizomes. The rocky clearings are also the haunts of the spectacularly beautiful Satinflower, *Sisyrinchium douglasii*, of the Iris family, whose inappropriate scientific name means "hog's snout". Many dicotyledonous plants also occur, such as Shooting Stars (*Dodecatheon* spp.) in the Primrose family, Fine-leaved Lomatium (*Lomatium utriculatum*) in the Carrot family, Delphiniums, Saxifrages, and the Small-flowered Woodlandstar (*Lithophragma parviflora*).

The third life form particularly well represented among Gulf Island plants is the winter annual. Seeds of winter annuals germinate in the fall or winter after the rainy season has begun, form a rosette of a few leaves, and begin vigorous growth as soon as the temperature warms up a little in late winter. They flower in late winter or early spring, set seed, and die, completing their entire life cycle before the summer drought begins. The seeds lie dormant over the dry summer, and germinate after the rains come again in the fall. If the seeds germinated as soon as they were ripe in the warmth of summer, the young seedlings would begin growing just as their environment was drying up, and the whole population would perish. Therefore these plants have evolved seeds which contain inhibitors that prevent germination at warm temperatures. The seeds require both moisture and cool temperatures to germinate, so that the plants do not begin to grow until November or later, when abundant moisture is a certainty in British Columbia. It is possible to coax most of these plants into germinating at any time if you can start them at about 5° or 10°C. In my laboratory I germinate the seeds in a refrigerator.

The winter annuals are often tiny plants, and incredibly abundant in numbers. For example, in some places I have seen more than 5,000 seedlings of the Large-flowered Blue-eyed Mary, *Collinsia grandiflora*, occupying less than one square foot of ground. The diversity of different species of winter annuals is also high; one might find up to 20 different kinds in an area of a few square meters.



Zygadenus venenosus



Lithophragma parviflora

Illustrations:
Rosemary Burnham

Many winter annuals have tiny flowers only a few millimeters across, and are habitually self-pollinated rather than cross-pollinated by insects. Self-pollination is usually disadvantageous in the long run, for it leads to genetic uniformity and the resulting lack of variation lowers the possibility of evolutionary change should the population find itself in a changed environment. In some environments, however, self-pollination has compensating advantages. With no need to expend energy on nectar production or to produce large attractive flowers, and no need to rely on the vagaries of pollinating insects, these plants can get reproduction over quickly and shorten their life cycle. Living in a habitat with impending drought and death, a short life cycle and the certainty of automatic self-pollination is selectively advantageous for the perpetuation of the population. The result is that many of the annual wildflowers are belly plants - so small that you have to lie on your belly to see them - and they may entirely escape the notice of a casual hiker. These days, escaping the notice of humans might be an additional selective advantage.

There are many species of small-flowered winter annuals in the Gulf Islands, most without common names. A high proportion of them, such as *Meconella*, *Myosurus*, *Nemophila*, *Plagiobothrys*, *Linanthus*, and *Orthocarpus*, are northern cousins of typical Californian plants. In many cases their Californian relatives have larger flowers and are insect-pollinated. It seems to be a general rule that the self-pollinated species of a genus have a wider geographical distribution than their cross-pollinated relatives, because their colonizing populations do not need to rely on insect pollinators to get them established.

Interesting as they are to botanists, these self-pollinated annuals are not responsible for spectacular floral displays. The annuals with larger flowers designed to attract insects are the ones that lead to my increased consumption of color film in spring. Perhaps the most spectacular of these are Sea Blush (*Plectritis congesta*), Blue-eyed Mary (*Collinsia grandiflora*), and Common Monkeyflower (*Mimulus guttatus*). These three species are abundant, colorful, and characteristically occur together. Common Monkeyflower is really capable of being a perennial, but in habitats where it dries out in summer this adaptable species can behave perfectly well as an annual. Another smaller monkeyflower, *Mimulus alsinoides*, often occurs with the Common Monkeyflower; they may be completely intermixed in the same clump. Monkeyflowers have an unusual adaptation to prevent self-pollination. The stigma, where pollen is deposited by insects, is sensitive to touch. It has two flat lobes that are spread apart widely. When an insect first enters the flower its back scrapes across the stigma lobes, depositing pollen grains picked up from previously visited flowers. Then the stigma lobes quickly close, just like a miniature Venus-flytrap. Deeper in the flower the insect picks up a new load of pollen, but the stigma lobes are closed as the insect exits from the flower, so self-pollination does not occur.

Blue-eyed Mary flowers are quite variable in color, combining blue, white and magenta. Occasionally, plants with pure magenta or pure white flowers are found. Flower size also differs considerably in different populations. There seems to be a complete range from flowers two centimeters long to flowers only two millimeters long. The small-flowered plants are usually called a different species, *Collinsia parviflora*, but they may just represent populations adapted for self-pollination.

Sea Blush also varies in color, ranging from pale pink to deep pink. Pure white flowers are also fairly common. Unlike many of our annuals with Californian relatives, our *Plectritis* has the showiest flowers of them all. The one-seeded fruits are even more variable than the flowers. They may have widespread ear-like wings or be completely wingless, may vary from pale straw-color through golden brown to dark brown, and may be hairy or hairless. A very closely related species, *Plectritis brachystemon*, often occurs together with Sea Blush. Its flowers are very small, whitish, and self-pollinating.

One of the earliest annual plants to flower is Spring-gold, *Crocidium multicaule*. These little yellow daisies begin blooming in February. Their seeds are unusual in that when they are moistened, they exude a sticky mucilage that glues them to the soil, or to the feet of birds or other animals, which aids in their dispersal.

By June most of the annuals are fading and setting seed. An exception is the Farewell-to-Spring, *Clarkia amoena*. Like its numerous California relatives it survives longer than the other winter annuals, and flowers in early summer when the grasses have dried to golden brown. By July, there is not much left to see in the island clearings. But then it's time to head up the mountains anyway, where spring is just beginning at the edge of the snowfields.

Reprinted by permission from Davidsonia, the journal of the U.B.C. Botanical Garden, Volume 8, Number 2, Summer 1977.

TIGER LILY

Brian Halliwell, Royal Botanic Garden, Kew

One of the lilies of the Pacific Northwest is *Lilium columbianum*, which extends upwards from just above sea level to over 5,000 feet. From Northern California it occurs northwards as far as British Columbia, being found both to the east and west of the Cascades. Whilst found growing on the prairies in full exposure, it is more usual to occur in light shade in clearings amongst conifers or at the edge of, or in woodland. The soil in which it grows is moist and acid although there is a tendency to dry out in late summer. Flower stems can reach four feet whilst flowers can vary from one to very many, which are likely to be whorled on the lower part of the stems and scattered above. For length of stem, flowers seem rather too small, each rarely exceeding 2½" across and are of the turks-cap type with bright orange spotted petals strongly reflexed.

On a trip to the Olympics, I came across the same species but very much dwarfer than is usual. The height of stem did not exceed 12" and the whole plant seemed, as a result, more in proportion with the size of the flowers. These dwarf forms occurred in several places at about 5,000 feet in an open situation. In one place they were in thin grass on a gentle slope, in another growing through a mats of a prickly prostrate juniper. There were no seed pods on the former but it appeared that the juniper had kept grazing animals at bay. It will be interesting to see if these dwarf lilies produce offspring when raised from seed that are dwarf also. Those people to whom I have spoken who have transferred these bulbs from the wild to gardens at low altitudes have admitted failure for the bulbs did not survive transplanting. Bulbs raised from seed are more likely to succeed.

ARCTOSTAPHYLOS IN WASHINGTON

Margaret Mulligan, Kirkland, Washington

There are three arctostaphylos native to Washington and one hybrid.

One of the most useful ornamental ericaceous shrubs is *Arctostaphylos columbiana*, commonly known as hairy manzanita. It is an erect roundish shrub six to ten feet tall, with bristly young shoots. The older branches are frequently angled and have rich red bark, forming an attractive shrub. The alternate gray-green evergreen leaves are oval in shape with an acute tip, about two inches long, and are hairy, especially beneath. The white to pink flowers are in short terminal clusters, slightly hairy, urn-shaped with spreading recurved lobes, followed by depressed orange to brown berries. This should not be confused with the Californian *A. manzanita*, which has smooth, chocolate brown bark and fruit which is not downy. *A. columbiana* grows on dry, exposed gravelly outcrops and rocky slopes west of the Cascades and along the coast from British Columbia to Mendocino County, California. The shrub was first noticed by Archibald Menzies in 1772 in the Port Discovery area, which he "...thought was a new species of *Arbutus* with glaucous leaves which grew to a bushy shrub to ten feet." A good stand of these shrubs can be seen today on a steep gravelly bank above Discovery Bay.

The best method of propagation is by cuttings, as the shrub is not easily established if collected from the wild or transplanted from a container. As soon as the cutting has formed a good root system, plant it and leave it in a position where it will have a fairly acid soil condition, good drainage and plenty of sun.

Another important native of this genus is *Arctostaphylos uva-ursi*, kinnikinnick or bearberry. It is a prostrate mat-forming shrub with long, flexible shoots which trail on the ground and will root at the nodes. The evergreen shiny, somewhat hairy leaves, one to one and one-half inches long, quite variable in shape, are oval, spathulate, roundish tipped and entire. The flowers, in racemes or clusters, are one-fourth inch long, white or tinged with pink, urn-shaped with short rounded lobes. The bright shining red berries are one-third inch or more in diameter and are the most attractive feature. We have one plant with top-shaped fruits which we have propagated and distributed. The two most likely forms obtainable from nurseries are 'Woods Red' and 'Point Reyes'. The best method of propagation is by cuttings. The dried leaves have been used by the Indians as tobacco and the berries are a source of food for bears and birds. The distribution of *A. uva-ursi* is circumpolar in the northern hemisphere. In the U.S.A. it is native from Alaska southwards to Northern California in the west, and in the east from Labrador to Virginia, including the New Jersey pine barrens.

Arctostaphylos x media is the natural hybrid between *A. columbiana* and *A. uva-ursi*, found wherever the two species grow together in Mason and Kitsap counties on the Olympic Peninsula, on dry, sandy soil. *A. x media* is a loose, open-spreading shrub with erect or ascending branches up to two feet in height. The leaves are oblong, downy beneath, the bark red-brown and peeling. The flowers are in pendulous clusters, white to rose-pink in color. This makes a useful rock garden shrub and an interesting subject for Bonsai. It is

N.O.H.S. NOTES

Spring 1980

Supplement to Horticulture Northwest

President's Letter

Members and Friends,

1980 has begun with excitement for NOHS. At our first lecture of this year on February 14th, it was our privilege to present Dr. Harold Tukey, the distinguished Horticulturist from Cornell University, who will be the Director of Arboreta programs and Professor of Horticulture at the University of Washington. He gave an interesting glimpse of the responsibilities he is assuming.

Mr. James Ellis, well-known civic leader, spoke on preservation of regional open spaces. Discussion following the lecture continued during the coffee hour.

It was a memorable Valentine's Day. Dr. Tukey revealed that he had proposed to his wife, Tish, twenty-five years ago on Valentine's Day. At the reception that evening at the Seattle Golf Club, members and guests were delighted to meet both Dr. and Mrs. Tukey and Dr. and Mrs. William Gerberding, the new President of the University of Washington.

Many of our members were invited to participate in the First Northwest Horticultural Conference, February 16th. Mareen Kruckeberg was responsible for the attractive NOHS display and Sue Olsen the interesting fern exhibit.

NOHS sponsored an especially interesting lecture March 4th by author, lecturer and plant collector, Alfred Evans, of the Royal Botanic Gardens in Edinburgh, Scotland, on "Plants of the Rock Garden." Mr. Evans, Past President of the Scottish Rock Garden Club, had come from attending the Pacific Northwest Rock Garden Study Weekend in Victoria, British Columbia where he was principal speaker.

A grant of \$750.00 has been voted by the Board of Directors for City Arborist, Marvin Black, to study Arboriculture in Great Britain this summer.

It is with appreciation that we greet the responses to our 1979 solicitation drive which are coming into the Educational Fund. Your contributions make it possible to NOHS to further horticultural education through scholarships, grants, workshops, lectures and other endeavors. A current report will appear in the summer issue of Horticulture Northwest.

Sincerely,

Jo Hotson
President

COMING GARDENING EVENTS

Spring 1980

- March 28 & 29 The American Magnolia Society
8th Annual Meeting
- For details call 774-1413
Edmonds, Washington
- April 10 How to Landscape Under New Growth Pressures -
10:30 a.m. Citizen Responsibility
- Museum of History and Industry
\$2.50 per person - \$1.00 I.D. Students
Sponsored by NOHS
- April 28 Garden Tour - University of British Columbia
Botanical Gardens and VanDusen Gardens
- \$30.00 includes bus transportation and lunch.
- May 8 Preserving the Quality of Landscape
7:30 p.m. Lawrence Halprin, Landscape Architect
- \$2.50 per person
- May 9 & 10 Spring Plant Sale - Alderwood Mall
- June 9 Tour of Gardens in The Highlands - details to be mailed
- June 20 & 21 Annual Fern Sale - Crossroads Shopping Center

April 28

GARDEN TOUR

April 28

University of British Columbia
Botanical Gardens
and
VanDusen Gardens

\$30.00 includes bus transportation and lunch

Make checks payable to Garden Tours and mail to Mrs. Chester R.
Paulson, 1215 Lexington Way E., Seattle, Washington 98112.

No cancellation after April 20

Bus departs 7:30 a.m., north end of the Arboretum, outside of gate.

WELCOME NEW MEMBERS

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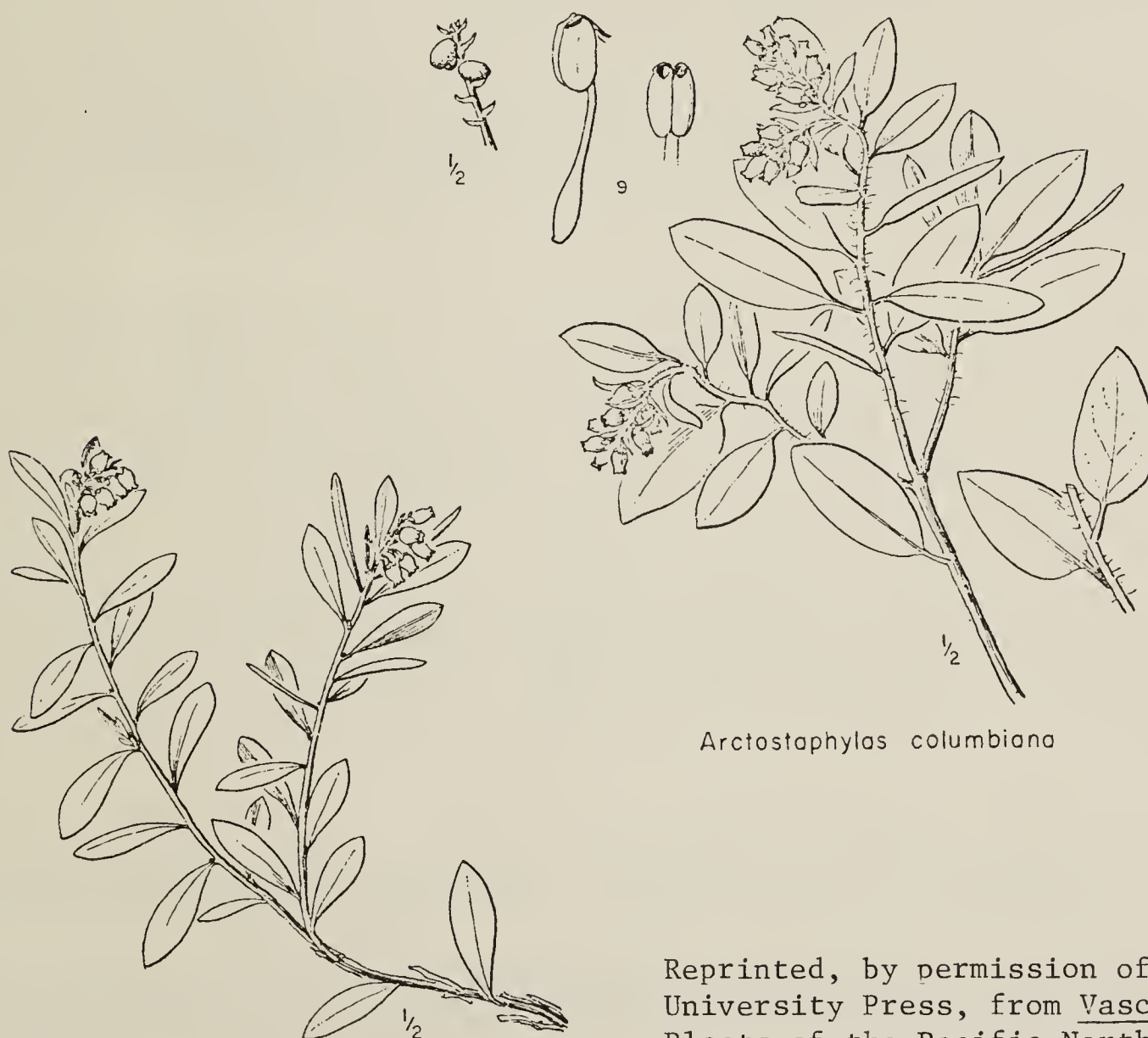
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becoming more generally available at nurseries, so look for it at our local plant sales. Cuttings are the best means of propagation, taken in late summer or fall. In the very cold winter of January, 1979, all these were often severely damaged, but by hard pruning in Spring most made good recovery.

Arctostaphylos nevadensis, the pinemat manzanita, is a procumbent straggling shrub with erect downy shoots and red-brown peeling bark. It often scrambles over rocks and forms large mats as wide as long with age. The leaves are shining, narrow, an inch long with abrupt acute tips (these are blunt in *A. uva-ursi*); the flowers white to pinkish, urn-shaped, in short racemes, followed by mahogany brown flattened fruits. It is quite hardy and can also be propagated by cuttings or by rooted layers. It is native on the east side of the Cascade range, south to the Blue Mountains in Oregon and the Sierra in California.



Arctostaphylos nevadensis

Arctostaphylos columbiana

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DISPORUM

Altha Miller, Issaquah, Washington

Disporum, an attractive member of the *Lilaceae* family, should be much better known and used more often in our gardens. They prefer shady places with some moisture. There are not many of our native plants that will thrive in deep shade as these do. We have *D. smithii* plants which are being grown in very deep shade in our woodland area. Although these have never been watered, even in the dry summer months, they still produce flowers and berries each year, even producing seedlings.

Disporum smithii ("Smith's fairy bells" or "fairy lanterns") is found west of the Cascade Mountains from British Columbia to northern California in light to deep woods, but is not common. I have never found it in the wild except in Oregon. However, you would have to see it in flower to be able to identify it, as there is such a variation in the leaves. *D. smithii* and *D. hookeri* var. *oreganum* have such similar leaves they are almost impossible to identify without the flowers.

The long, narrow, elegant flower bells of pale creamy yellow to white or greenish white of *D. smithii* are held in clusters below the pairs of leaves. The stamens and pistils are included inside the flower. Berries are long ovate, yellow to orange scarlet. Leaves are broad, cordate and prominently parallel-veined and most attractive.

Disporum hookeri var. *oreganum* ("Oregon fairy bells") is far more common and found in the same areas and habitat, but also grows east of the Cascade Mountains. The flower is smaller and more bell-like, greenish white with exerted pistil and stamens. Berries are ovate, golden yellow to red. The leaves are very similar to *D. smithii* but sometimes are slightly hairy with elongated tips, having what Dr. Clark calls "drip tips." Both of these varieties of *Disporum* are most desirable and easy to grow.

There are around 15 known species, mostly from North America and a few from Asia. *Disporum trachycarpum* ("fairy bells") is found east of the Cascade Mountains from central British Columbia to Washington, northeast Oregon to much of Idaho, Montana and Arizona, Colorado and east to the Dakotas and Nebraska. I found this plant in Montana but unfortunately not in flower.

Disporum maculatum ("nodding mandarin" or "spotted disporum") is found west of a line from Ohio to Tennessee, but not in our area. *D. lanuginosum* ("yellow mandarin") is an eastern species from Ontario to Georgia and Tennessee.

Abrams *Illustrated Flora of the Pacific States* lists *Disporum trachyandrum* ("Sierra fairy bells") from coniferous forests in the arid transition zone from southern Oregon to Tulare County in the Sierra Nevadas and to Trinity County in the coast ranges.

I have only seen pictures of these other varieties of *Disporum*, but am inclined to believe we have the most choice varieties here in our Pacific Northwest!

FERN STUDY GROUP ACTIVITIES

Sue Olsen, Bellevue, Washington

Meetings:

Visited the gardens and propagation facilities of study group members: Jan Dalby, Sylvia Duryee, Neill Hall, Judith Jones, Mareen Kruckeberg, Betty Madison, Edna & Marshall Majors, Sue Olsen.

Held discussion sessions on books, insecticides, and plant societies.

Carried out a propagation experiment testing the same spore on the following media: compost, leaf mold, peat combinations, jiffy pots, and ground red clay pots--some sterilized and some not.

Field Trips Day:

Grand Ridge Nursery (Steve Doonan & Phil Pearson)
Henry Molgaard's Greenhouses, Wholesale Fern Grower, Snohomish
Perry Creek Trail--extensive number of native ferns
Mt. St. Helens--pumice collecting trip--pumice subsequently killed;
many choice ferns of members and is NOT recommended for propagation use.

Field Trips Overnight:

Glide, Oregon wildflower show and garden of Jim Baggett, Corvallis, Oregon
Beverly Creek and the North Fork Teanaway River area, Wenatchee Mountains
Gardens and propagation facilities of Boyd Kline and Lawrence Crocker
Medford, Oregon Garden of J.D. Vertrees, Roseburg, Oregon
Mt. Vernon, Washington experiment station--tissue culture study
Vancouver, B.C. gardens of Don Armstrong and friends, UBC research area, conservatory and gardens plus native fern areas near the city.

Activities:

Propagating for and managing NOHS Spring Fern Sales.
Staffing and organizing the fern department at the NOHS Fall Sale.

Current project under the direction of Jan Dalby--pressing and mounting fern herbarium specimens for use at the U.W. Arboretum. Have well over 100 completed to date.

Study Group Members:

Mrs. Thomas Dalby
Mrs. Phil Duryee
Mr. Dale Greer
Mr. Neill Hall
Mrs. Garrett Horder
Mrs. Charles Hyde

Judith Jones
Mrs. Arthur Kruckeberg
Mrs. James Madison
Mr. & Mrs. Marshall Majors
Mrs. Roland McKinstry
Mrs. Harry Olsen

ENGLISH MUFFINS AND LABRADOR VIOLETS

Sue Olsen, Bellevue, Washington

Many years ago while guiding visitors on an NOHS garden tour, my charges and I wandered through a large woodland plot of violets. Any thoughts of reverie were immediately broken by a flurry of comments belittling the lack of sophistication and the weedy tendencies of the lowly plant. Something, perhaps a spur from my childhood treasure chest, or maybe those smiling lavender faces, made me speak up in their defense. I've long since forgotten what I said, but in time the tour ended and the tourists departed save for one gentle lady who had quietly suffered with the abused violets. She wished to share with me a gift which I shall always treasure, a recipe for violet jelly.

The recipe is as follows: Fill one qt. jar with violet blossoms; add boiling water. Cover and let stand for 24 hours. Strain and use two cups violet infusion, juice of one lemon and one package of pectin. Bring to boil. Add four cups of sugar. Bring to boil again and boil one minute. Pour into pint glasses and seal.

It is all quite simple except for one thing...that first ingredient! With approximately 900 blossoms in a quart jar at best three-quarters full, I quit counting. However, I see great potential here for restless children, especially those of the peanut butter and jelly generation who have a hankering for picking your prize flowers. Meanwhile, for my initial experiment I chose *Viola Labradorica*, since as anyone who has introduced a plant to their garden know, they tend towards cheerful abundance. (For those wishing to pick in lesser quantities, a few blossoms sprinkled on a fruit salad are guaranteed to raise eyebrows, appetities and inquiries from fellow diners.) The jellied result falls into that noncommittal category known as "interesting." If nothing else, the translucent violet color is superb. I have given away a number of jars with responses ranging from delicious to the more stoic, and perhaps more honest, "unusual." Meanwhile, children love it. Perhaps, if we were to test other species, we could come up with a connoisseur's jargon approaching that of the wine maker. But as for violets, I have a very pleasant memory, and if you don't like them...eat them!!!



Kiwi: Be forewarned, we learned the hard way that slices of raw kiwi fruits (*Actinidia chinensis*) added to gelatine will keep it from setting. Guessing that the kiwi might harbor the same sort of enzymes that preclude the use of raw pineapple in gelatine, we sieved out the fruit and reheated the liquid to boiling. Heat appears to take care of the enzymes. With a new packet of gelatine and no kiwi slices, our dessert firmed up properly. We dumped the kiwi slices into a dish of hardened gelatine to recheck our suspicions. It returned to a partial liquid state overnight.

REPORT OF THE PROPAGATION WORKSHOP

On January 22nd, 11 members met at Marge Baird's. Cuttings taken were:

Tsuga canadensis 'Cole's Prostrate'
 2 species of juniper
 2 species of podocarpus
 2 species of arctostaphylos
 Prostrate redwood
 A rare osmanthus
Cryptomeria obtusa var. *spiralis*, etc.

Seeds planted were:

Franklinia alatamaha
Bupleurum fruticosum
Platycodon grandiflorus 'Mariesoi'
 6 species of rhododendron, etc.

At this writing, some of the *Platycodon* and some of the rhododendrons have germinated, creating much excitement!

On February 20th, 8 members met to divide ground covers and make additional cuttings. The former were *Cotoneaster adpressus*, *Potentilla nevadensis*, *Fragaria chiloensis*, *Waldsteinia fragarioides*, *Cornus canadensis*, *Pachysandra terminalis*, *Arenaria balearica*, and others.

We plan to meet February 28th at Harriet Short's for additional ground covers, in June to divide primula, iris, etc., and again in July for broad-leaved evergreen cuttings. Come and learn with us. It's fun! We have containers and soil. Think what a big help we'll be to our plant sales. Anyone interested, call Sylvia Duryee, 329-2062, or Marge Baird, 454-3862.

Marge Baird



Watch for a Spring Sale, May 9th and 10th, at the new Alderwood Mall in Lynnwood, which will emphasize education for the new gardener and the planning of year-round color in your garden; the always eagerly-awaited Fern Sale which will be June 20th and 21st at Crossroads in Bellevue; and the Annual NOHS Fall Plant Sale, September 26th and 27th.



Tidbits

by Ladybug



My system of storing slides isn't yet perfected, but it works well for me. This is how I file my slides - at present about 25,000 of them.

All slides are filed in metal trays 14½" x 7" of the "group file" kind. I used to buy these from Montgomery Ward, but they have replaced them with cheap and nasty plastic things and I now buy a double-decker type tray from a local Best Discount House. At first, I used trays with individual slots, but it is tedious taking slides in and out of these and they do not hold as many slides. The group file is divided into 30 sections, each holding 20 slides, 600 per tray. They cost about \$6.00 each.

Slides are filed in alphabetical order under the major categories listed in my enclosed catalog. Each category goes in a separate tray, the files being labeled and stored edgewise like books. In my case, each category takes up several trays and these are labeled A-D, E-H, etc.

I maintain a card index file for categories such as ground covers. Ground cover slides are filed under shrubs, perennials, vines (ivy), or whatever. The index card lists them in alphabetical order so that I know where to look. My own card index is extensive...fall color, winter flower, decorative fruits, dwarfs, plants for wet places, rock garden plants, cacti, palms, etc. This develops with experience and as the need arises.

Occasionally, a slide fits into two categories. Wild flowers is a case in point. I file this where it is most likely to be wanted. Zephyranthes atamasco, for instance, would be filed under bulbs. In the Wild Flower tray is inserted a blank slide (I save my rejects for this, punching out the picture portion) labeled "Zephyranthes atamasco - see Bulbs".

Some selections of slides are used repeatedly for lectures. These I have duplicated (Kodak only; I have not found other duplicates satisfactory). The duplicates remain permanently in a carousel, all ready to go.

Pictures of gardens are filed under the name of the garden, with individual plants in them cross-referenced by the blank slide method.

When on a photographic trip, I note down each picture taken. In the evening these notes are transferred to a permanent, large notebook. Sometimes I cannot remember the name of a particular plant but can remember where I photographed it.

Any system of filing (any good one, anyway) develops around its owner's individual needs, but this is a workable basic method.

Pam Harper



Does anyone know the viability of the seed of *Nothofagus fusca*? This is a forest tree native to New Zealand and Chili. Previous experience with this seed has produced germination only once, which indicated that it may have to be fresh. Any information concerning propagation and hardiness would be helpful.



Use the plastic peanuts, disks, etc. left over from packaging to put in the bottom of containers when potting plants or planting seeds in pots. Imagine the difference in weight between this material, which is usually discarded, and rocks.



The garden tour to visit the University of British Columbia Botanical Gardens and the VanDusen Garden in Vancouver, B.C. will be Monday, April 28th. Tours to visit notable gardens in the Highlands will be June 9th, and a Fall tour on October 13th.



Northwest native *Sedum spathulifolium* brightens the rock garden at two seasons, during the winter when its rosettes of fleshy leaves turn a bright rosy red and later in the spring when its bright yellow flowers appear. Though a cliff dweller in the wild, it is not a demanding garden subject and any sunny location, preferably next to a rock, seems to meet its needs.

Jean Witt



Pacific Coast native irises, particularly *Iris tenax*, can be divided in early spring. Check for plenty of live white roots and observe the precaution of moving only half a choice clump in any one year. Deal with the remainder of the clump another season, after the first divisions have become well established.



Horticultural society helps Arboretum, other projects

The Northwest Ornamental Horticultural Society is a group dedicated to supporting the University of Washington Arboretum and other horticultural interests throughout the Pacific Northwest. This is one of the outstanding horticultural organizations open for membership in this area.

The Northwest Ornamental Horticultural Society, formerly known as the Friends of the University of Washington Arboretum, was founded in 1966 as an Arboretum supporting organization. From its inception, education has been of primary importance. This has been demonstrated by the offering of lectures and classes to members and the general public.

IT HAS BEEN the policy of the N.O.H.S. to give financial support to the University of Washington Arboretum program, and to other educational horticultural endeavors. Since its inception, the organization has given \$125,000 in support of the University of Washington Arboreta, Rhododendron Species Foundation, the Rae Berry Botanic Garden of Portland, and the Bloedel Reserve. The society also supports the American Horticultural Society and the American Association of Botanical Gardens and Arboreta.

The N.O.H.S. is vitally interested in establishment of the Union Bay Teaching and Research Arboretum. The sum of \$35,000 was given to the Board of Regents of the University of Washington to finance the initial site plan for this new and challenging arboretum facility.

THE N.O.H.S. has established a horticultural educational fund with a goal of \$100,000. The use of the income from the fund will be restricted to furthering horticultural education, development and related activities.

The active concern of the N.O.H.S. is to stimulate the interest of the gardeners in the Pacific Northwest to the wealth of orna-



Gardening

Ed

Hume

Times garden editor

mental plant material which can be grown in this region, its propagation and cultivation. The organization, through its plant sales, has introduced to the gardening public new material, including some of those native to our area.

It would take more than one article to list the many achievements of the Northwest Ornamental Horticultural Society and its many awards, so instead I will discuss some of the 1980 activities of this fine group.

THE 1980 lecture series, "Plantscape 1980 - 2000" will begin Thursday, at 10:30 a.m. at the Museum of History and Industry. James Ellis, Seattle attorney and civic leader, will speak. His subject will be "The Issues of Major Regional Open Space." The new director of the University of Washington Arboretum programs, Dr. Harold B. Tukey, Jr., will be introduced and will speak on "Changing Faces of Arboreta."

The second lecture, to be held Thursday, March 13 at 10:30 a.m., will discuss "Urban and Suburban Planning for the Survival of Plantscape." A third lecture will be Thursday, April 10, at 10:30 a.m. on "How to Landscape Under New Growth Pressures and Citizen Responsibility."

The final lecture of the series will be May 8 at 7:30 p.m. and will discuss "Preserving the Quality of Landscape." All lectures are open to the public for a fee of \$2.50 a person or \$1 for students.

THE N.O.H.S. will offer a series of Spring Garden Tours, visiting some of the outstanding residential gardens throughout the Paci-

fic Northwest. Dates and places of these outstanding garden tours will be featured on The Seattle Times garden page in the garden calendar each Friday.

For the first time, the N.O.H.S. will be featuring a special plant sale for beginning gardeners in the spring. It will be May 9 and 10 in the new Alderwood Manor Mall.

In June, N.O.H.S. holds a special fern sale, featuring the common, new and unusual varieties of ferns that can be grown in Northwest gardens.

Then, in the fall, a special Fall Sale takes place which caters to the discriminating gardener and features a wide range of types and varieties of plant materials, including some of those native to this region. The funds from these sales are used for the financial support of the Arboretum and other educational horticultural endeavors.

IN ADDITION to the lectures, exhibits, plant sales and garden tours, the N.O.H.S. also publishes a quarterly journal, Horticultural Northwest, and features a seed exchange for its members. Study groups have been available, including one for botanical drawing, and groups interested in ferns, rhododendrons and horticultural therapy.

The N.O.H.S. welcomes new members and encourages them to participate in its programs. All the services of this nonprofit organization are offered for an annual membership of \$10. You can obtain a new membership application by writing The Northwest Ornamental Horticultural Society, in care of the University of Washington Arboreta, XD 10, Seattle, WA 98195.

(Ed Hume cannot respond to personal inquiries by mail but will answer in his columns on a regular basis those of general interest. Address questions and comments to him, c/o The Seattle Times, P.O. Box 70, Seattle WA 98111.)

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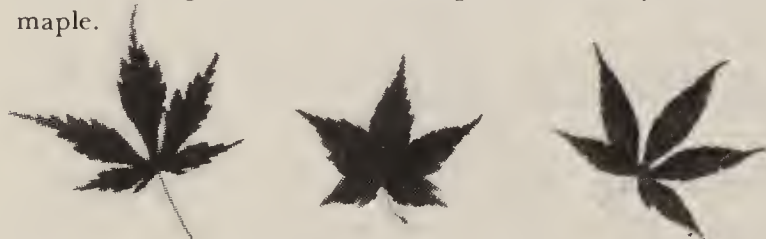
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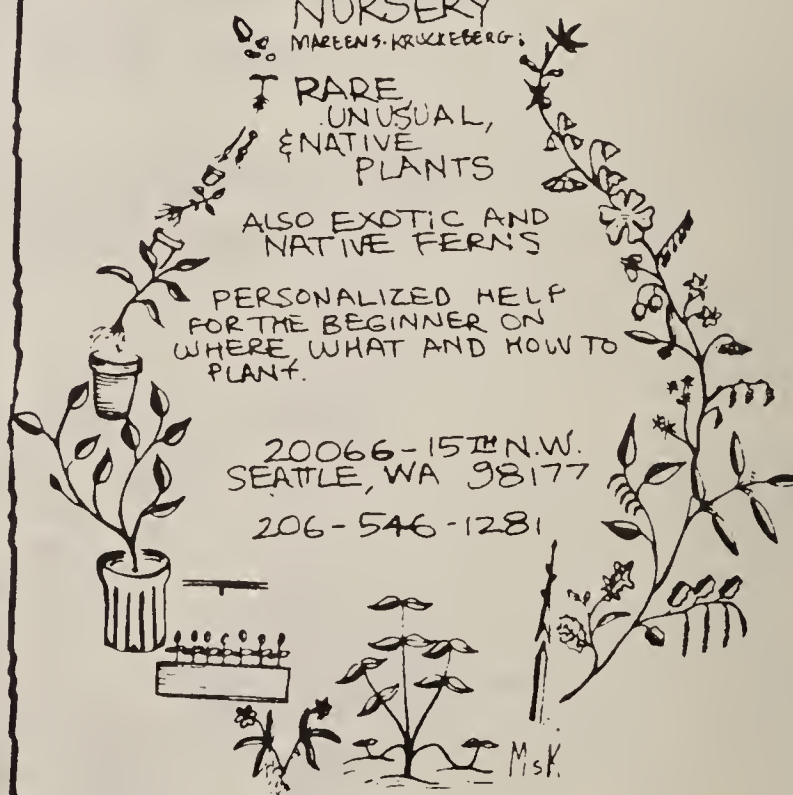
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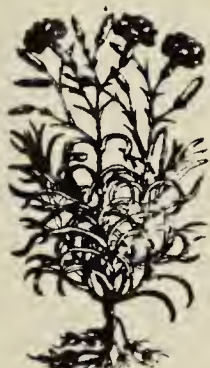
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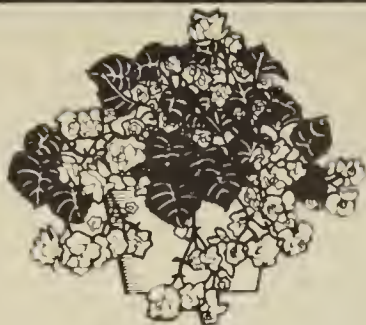
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